

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF WIRELESSCO, L.P. FOR)	
ISSUANCE OF A CERTIFICATE OF PUBLIC)	
CONVENIENCE AND NECESSITY TO)	
CONSTRUCT A PERSONAL COMMUNICATION)	CASE NO. 96-312
SERVICES FACILITY IN THE LOUISVILLE)	
MAJOR TRADING AREA (BECKLEY STATION)	
PCS FACILITY))	

O R D E R

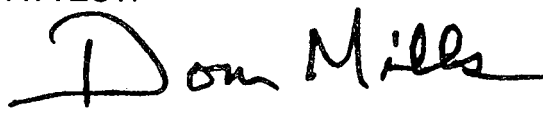
The Commission has received the attached letters from Theodore W. Dearing, Kenney Curry, Bob and Kitty Kirzinger, Alice K. Curry, Michael A. Diebold, Thomas S. and Donna Slaughter, and Nancy O'Neil (hereinafter referred to collectively as "Petitioners") regarding the proposed personal communication services facility to be located at the intersection of Aiken and Johnson Road, Louisville, Jefferson County, Kentucky.

IT IS THEREFORE ORDERED that:

1. WirelessCo, L.P. ("WirelessCo") shall respond to Petitioners' concerns by certified letter, within 14 days from the date of this Order.
2. WirelessCo shall file a copy of the certified letter and dated receipt, within 7 days of the date of the receipt.

Done at Frankfort, Kentucky, this 24th day of July, 1996.

ATTEST:



Executive Director

PUBLIC SERVICE COMMISSION



For the Commission

RECEIVED

July 3, 1996

JUL 11 1996

PUBLIC SERVICE
COMMISSION

Executive Director
Public Service Commission
730 Schenkel Lane
Box 615
Frankfort, Ky 40602

K. CURRY
16911 Aiken Road
Louisville, Ky 40245

Dear Mr. Don Mills,

I am writing to protest the placement of a telecommunication tower on the property at the corner of Johnson Rd and Aiken Rd. in rural eastern Jefferson County. I understand that Sprint Spectrum wishes to locate this tower and I strongly object. The case number is *96-312 Sprint*

I request that you, Mr. Mills, as Director of the Public Service Commission, act in my behalf in this case and intervene to stop the construction of this tower. You are my representative and I call upon you to strike down this initiative of Sprint Spectrum.

I own property close to the intersection of Johnson and Aiken Roads where the proposed tower is to be located. My reasons for this request are:

The proposed tower will lower, if not destroy, the value of agricultural property nearby.

The proposed tower will lower, if not destroy, the value of residential property nearby.

The tower's height will ruin skyline and the aesthetics of this entire quadrant of the county.

The tower will be a safety hazard for children growing up on adjacent property.

Placing the tower here puts corporate greed ahead of preserving the environmental nature of the Floyds Fork corridor.

The tower is of its nature a commercial venture and simply does not fit into the planned natural resource area designated by the Jefferson County Planning Commission.

Sprint has not demonstrated to me that its proposed tower will not radiate harmful electrical impulses onto my property.

Thank you for considering my request for immediate intervention in this case. I hope to hear from the Public Service Commission in the near future about this matter.

Sincerely yours,

Kennedy Curry

Case # is
96-286 Bell South

P.S. IT has recently come to our attention that Bell South wants to build a tower within a quarter mile of Sprint's proposed site. We already have the WTHAS tower & B&E's intent line to tremble

July 3, 1996

RECEIVED

JUL - 9 1996

PUBLIC SERVICE
COMMISSION

Executive Director
Public Service Commission
730 Schenkel Lane
Box 615
Frankfort, Ky 40602

Dear Mr. Don Mills,

I am writing to protest the placement of a telecommunication tower on the property at the corner of Johnson Rd and Aiken Rd. in rural eastern Jefferson County. I understand that Sprint Spectrum wishes to locate this tower and I strongly object. The case number is 96-312

I request that you, Mr. Mills, as Director of the Public Service Commission, act in my behalf in this case and intervene to stop the construction of this tower. You are my representative and I call upon you to strike down this initiative of Sprint Spectrum.

I own property close to the intersection of Johnson and Aiken Roads where the proposed tower is to be located. My reasons for this request are:

The proposed tower will lower, if not destroy, the value of agricultural property nearby.

The proposed tower will lower, if not destroy, the value of residential property nearby.

The tower's height will ruin skyline and the aesthetics of this entire quadrant of the county.

The tower will be a safety hazard for children growing up on adjacent property.

Placing the tower here puts corporate greed ahead of preserving the environmental nature of the
Floyds Fork corridor.

The tower is of its nature a commercial venture and simply does not fit into the planned
natural resource area designated by the Jefferson County Planning Commission.

Sprint has not demonstrated to me that its proposed tower will not radiate harmful
electrical impulses onto my property.

Thank you for considering my request for immediate intervention in this case. I hope to hear from the Public Service Commission in the near future about this matter.

Sincerely yours,

Bob + Kitty Herzinger
16911 Aiken Rd.
Loc. 40245

July 3, 1996

RECEIVED

JUL - 8 1996

PUBLIC SERVICE
COMMISSION

Executive Director
Public Service Commission
730 Schenkel Lane
Box 615
Frankfort, Ky 40602

Dear Mr. Don Mills,

I am writing to protest the placement of a telecommunication tower on the property at the corner of Johnson Rd and Aiken Rd. in rural eastern Jefferson County. I understand that Sprint Spectrum wishes to locate this tower and I strongly object. The case number is **96-312**

I request that you, Mr. Mills, as Director of the Public Service Commission, act in my behalf in this case and intervene to stop the construction of this tower. You are my representative and I call upon you to strike down this initiative of Sprint Spectrum.

I own property close to the intersection of Johnson and Aiken Roads where the proposed tower is to be located. My reasons for this request are:

The proposed tower will lower, if not destroy, the value of agricultural property nearby.

The proposed tower will lower, if not destroy, the value of residential property nearby.

The tower's height will ruin skyline and the aesthetics of this entire quadrant of the county.

The tower will be a safety hazard for children growing up on adjacent property.

Placing the tower here puts corporate greed ahead of preserving the environmental nature of the
Floyds Fork corridor.

The tower is of its nature a commercial venture and simply does not fit into the planned
natural resource area designated by the Jefferson County Planning Commission.

Sprint has not demonstrated to me that its proposed tower will not radiate harmful
electrical impulses onto my property.

Thank you for considering my request for immediate intervention in this case. I hope to hear from the Public Service Commission in the near future about this matter.

Sincerely yours,

Alice K Curry
Curry FARMS
16911 Aiken Road
Lawisville, Ky 40245

RECEIVED

JUL - 5 1996

PUBLIC SERVICE
COMMISSION

July 3, 1996

Executive Director
Public Service Commission
730 Schenkel Lane
Box 615
Frankfort, Ky 40602

Dear Mr. Don Mills,

I am writing to protest the placement of a telecommunication tower on the property at the corner of Johnson Rd and Aiken Rd. in rural eastern Jefferson County. I understand that Sprint Spectrum wishes to locate this tower and I strongly object. The case number is 96-312

I request that you, Mr. Mills, as Director of the Public Service Commission, act in my behalf in this case and intervene to stop the construction of this tower. You are my representative and I call upon you to strike down this initiative of Sprint Spectrum.

I own property close to the intersection of Johnson and Aiken Roads where the proposed tower is to be located. My reasons for this request are:

The proposed tower will lower, if not destroy, the value of agricultural property nearby.

The proposed tower will lower, if not destroy, the value of residential property nearby.

The tower's height will ruin skyline and the aesthetics of this entire quadrant of the county.

The tower will be a safety hazard for children growing up on adjacent property.

Placing the tower here puts corporate greed ahead of preserving the environmental nature of the Floyds Fork corridor.

The tower is of its nature a commercial venture and simply does not fit into the planned natural resource area designated by the Jefferson County Planning Commission.

Sprint has not demonstrated to me that its proposed tower will not radiate harmful electrical impulses onto my property.

Thank you for considering my request for immediate intervention in this case. I hope to hear from the Public Service Commission in the near future about this matter.

Sincerely yours,

Michael Richard

16411 Aiken Rd
Louisville Ky 40220

4605 Ridgeway Ct.
Louisville, ky 40220

4521 - 5589

RECEIVED
JUL 15 1996
PUBLIC SERVICE
COMMISSION

JULY 13, 1996

PUBLIC SERVICE COMMISSION
BOX 615
FRANKFORT, KY 40602

DEAR, MR. MILLS,

RE: CASE 96-312 AND CASE 96-286 SPRINT SPECTRUM AND BELL SOUTH
MOBILITY PROPOSE TO LOCATE MONOPOLE TOWERS IN EASTERN JEFFERSON
COUNTY.

I BEG YOU TO INTERVENE IN BOTH CASES AND STOP THE ACTIONS OF
BOTH THESE CORPORATIONS. THEY WISH TO LOCATE TWO MONOPOLES
ON PROPERTIES DIRECTLY ACROSS JOHNSON ROAD FROM EACH OTHER.
BOTH THESE PROPERTIES LIE IN THE FLOYDS FORK CORRIDOR. BOTH
WILL BE PERMANENT EYESORES AND POSSIBLE HEALTH HAZARDS TO ALL
OF US WHO LIVE OR WORK IN THE IMMEDIATE AREA.

HOW CAN YOU AS PUBLIC SERVICE COMMISSIONER WORK SO THAT BOTH THE
CITIZENS WHOSE RIGHTS ARE BEING COMPROMISED AND THE CORPORATIONS
WHOSE LUST FOR PROFITS IS BEING FLAUNTED CAN BE HONORED? LOCATE
BOTH OF THESE TOWERS ON THE EXISTING L G & E HIGH LINE RIGHT OF WAY
THAT RUNS ABOUT HALF MILE FROM THE PROPOSED LOCATIONS THAT BOTH
CORPORATIONS SEEK.

I URGE YOU TO EXERCISE SOME LEADERSHIP IN THESE TWO CASES. LOOK
CLOSELY AT WHAT IS GOING TO HAPPEN. STAND UP FOR THE CITIZENS AS YOU
ARE SUPPOSED TO. WORK WITH THE CORPORATIONS AND THE L G & E LEADERS
SO ALL OF US CAN LIVE ON WITHOUT THE BITTERNESS THAT WILL ENSUE BY
BUILDING THESE MONOPOLES SO CLOSE TOGETHER ON PRIVATE PROPERTY.
INTERVENE IN THESE CASES. STOP THE HEADLONG RUSH OF THE
CORPORATIONS TO JAM TOWERS DOWN ACROSS OUR BEAUTIFUL COUNTY
BEFORE THE NEW LAW COMES INTO EFFECT. I IMPORE YOU, WORK FOR THE
COMMON GOOD.

SINCERELY YOURS,

MICHAEL A. DIEBOLD

Nancy O'Neil
2109 Johnson Road
Louisville, KY 40245

July 17, 1996

Mr. Don Mills
Executive Director
Public Service Commission
Box 615
Frankfort, Kentucky 40602

RECEIVED

JUL 18 1996

PUBLIC SERVICE
COMMISSION

RE: Cases # 96-268 and 96-312

Dear Mr. Mills:

This letter is to state my request for full intervention and a public hearing on the above mentioned cases regarding proposed cellular towers.

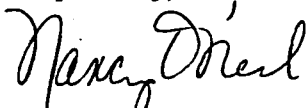
Several years ago my husband and I were finally able to move to the beautiful Floyd's Fork area off Aiken Road in eastern Jefferson County. We have worked very hard to make our dream of living in a rural area come true. As you are probably aware, there are two cellular towers proposed in this area, both are within 300 ft. of our home. A Sprint tower is proposed on the corner of Johnson and Aiken Roads. A Bell South tower is also planned for the back of our next-door's neighbor's property.

We would have never purchased our home if we knew there was any possibility of such an eyesore being put right in our backyard. Now it seems very likely this will be forced upon us and we feel rather helpless. If we choose to move, I feel certain no one else would care to purchase our home and have this ugly obstruction in view of their property. I strongly feel that this will lower our property value.

We have an open mind for tasteful and planned development. Cellular phone companies, however, should be required to use industrial areas or rural areas that are a reasonable distance from residential homes. This is a widespread problem that is creating a very hostile public rage. Homeowners need to know that someone is looking out for their interest as well as big business.

I beg you to help us in this matter.

Respectfully,



Nancy O'Neil

Executive Director
Public Service Commission
730 Schenkel Lane
P.O. Box 615
Frankfort, Kentucky 40602

RECEIVED

JUL 22 1996

PUBLIC SERVICE
COMMISSION

96-312
Received
July 22 1996

Dear Sir:

I own property at 2220 Johnson Road, Louisville 40245. I am adjacent to the property at the corner of Aken Road and Johnson Road. This is the location Wireless Co. LP, Suite 100 Louisville Kentucky 40222, proposes to place a telecommunication tower. I am completely opposed to this tower.

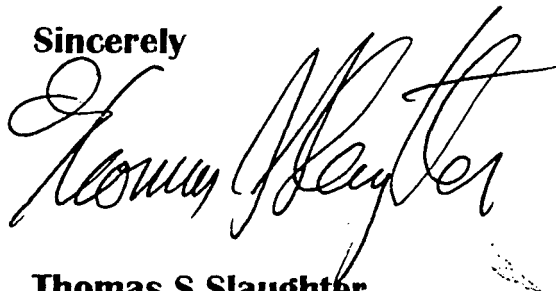
There is also another telecommunication tower being promoted for the property across Johnson Road on Conrad Oberst property. I also oppose this Tower.

Why do we need 2 towers within 1/2 mile of each other, if there has to be a tower located in this area, can't these companies share 1 tower? There are also high voltage towers near by, can these antennas be mounted on them?

I am completely opposed to placing towers at this location. This is a residential area, not a commercial location. It is also in the Floyds Fork Corridor that has had so much attention in the last year for preservation.

Please use your position as public Service Commissioner to encourage development in commercial areas.

Sincerely



Thomas S Slaughter
2220 Johnson Road
Louisville Kentucky 40245
Phone 502-245-8851

96-312

Executive Director
Public Service Commission
730 Schenkel Lane
P.O. Box 615
Frankfort, Kentucky 40602

RECEIVED

JUL 22 1996

PUBLIC SERVICE
COMMISSION

Dear Sir:

I own property at 2220 Johnson Road, Louisville 40245. I am adjacent to the property at the corner of Aken Road and Johnson Road. This is the location Wireless Co. LP, Suite 100 Louisville Kentucky 40222, proposes to place a telecommunication tower. I am completely opposed to this tower.

There is also another telecommunication tower being promoted for the property across Johnson Road on Conrad Oberst property. I also oppose this Tower.

Why do we need 2 towers within 1/2 mile of each other, if there has to be a tower located in this area, can't these companies share 1 tower? There are also high voltage towers near by, can these antennas be mounted on them?

I am completely opposed to placing towers at this location. This is a residential area, not a commercial location. It is also in the Floyds Fork Corridor that has had so much attention in the last year for preservation.

Please use your position as public Service Commissioner to encourage development in commercial areas.

Sincerely



Donna Slaughter
2220 Johnson Road
Louisville Kentucky 40245
Phone 502-245-8851

96-312

July 7, 1996

Mr. Don Mills, Executive Director
Public Service Commission
730 Schenkel Lane
Box 615
Frankfort, KY 40602

RECEIVED

JUL 12 1996

PUBLIC SERVICE
COMMISSION

Dear Mr. Mills,

I would like to take this opportunity to ask you to consider denying the request for installation of a transmission tower as it relates to the property at the intersection of Aiken & Johnson Roads in Eastern Jefferson County. The following are a few concerns that are presently on my mind (some are future factors) since I share a common property line and will be within approximately 300 yards of the proposed tower installation.

First, the Floyd's Fork Corridor was established to maintain the natural beauty of water-way and vegetation in this area of Jefferson County. Development of residential and commercial property must comply with strict alterations to any landscaping. Will the tower aid or distract from the intention of protecting this natural surrounding due to its close proximity of the corridor?

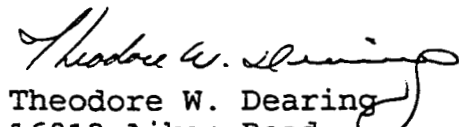
Second, there are currently electrical high tension wires and towers within 400 yards of the requested area. When the foliage of the trees is in full bloom some of this is hidden. But I am certain that an additional distracting view will be present during the dormant season. Again, will this create a dotted landscape of 100' towers in an area that is trying to be preserved?

Third, not all of the immediate households surrounding the requested areas are currently being served with cable television. My contact with the local cable company indicates that there is no near future plans for installation because its not densely populated. Current reception at my house is extremely limited without purchasing a more expensive antenna. It is a known fact that transmission towers interfere with television signal reception. Will the company that is requesting to build this new tower guarantee in writing that I will receive no additional interference now or in the future?

Fourth. Although some of the area adjacent to this sight is not completely developed for residential usage, can you or I predict the future! Two Realtors have informed me that the resale value of housing near power lines and towers is less desirable than those that do not have them. What financial impact will this have on the future resale value of my property?

Fifth. My wife and I purchased our lot twenty years ago with the dream of someday building our house in a quiet country setting. We saved our money, planned our future and spent countless weekends preparing the lot for a building site. Little did we realize that our county government planners could not foresee the expansion in this locale to provide some of the basic needed services that most communities enjoy. There is no city water, no sewers, no natural gas, a one lane bridge that constricts traffic, very narrow and sometimes dangerous roads and we seem to be the last road to have any snow removal. (Of course everyone feels that way after a big snow fall.) We built our house anyway thinking that someday the basic services would improve. I feel that allowing this tower to be constructed will enable more construction in the future and only lengthen to my list of disappointment in zoning regulations.

Thank you for your time and consideration in this matter. And, I invite you to my house anytime to arrange a site visit of the proposed tower construction from my side of the fence.


Theodore W. Dearing
16812 Aiken Road
Louisville, KY 40245
(502) 245-6564

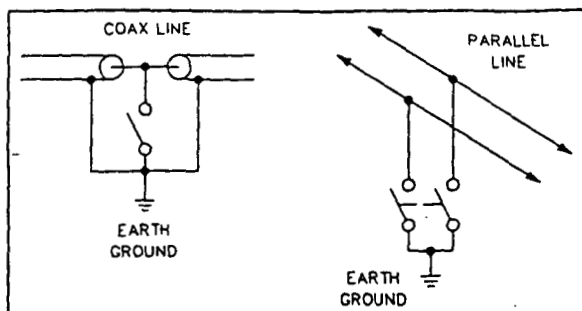


Figure 8-6—A heavy-duty knife switch can be used to connect the wires in your antenna feed line to ground. A clip lead to a ground wire can be used instead of the switch. This will prevent a large static build-up on your antenna. It will also prevent equipment damage caused by voltage on your antenna produced by a nearby lightning strike. There is no sure way to prevent a direct hit by lightning, however.

station (with the switch open, of course!) if the lead from the feed line to the switch is no more than a couple of inches long. An alligator clip can be used instead of the switch. Whatever you use, don't forget to disconnect the ground when you transmit. This precaution is useful only on the HF bands. The switch will cause high SWR if used at VHF and UHF.

Another device that can help protect your equipment in an electrical storm is a *lightning arrester*. This device connects permanently between your feed line and the ground. When the charge on your antenna builds up to a large enough potential, the lightning arrester will "fire." This shorts the charge to ground—not through your station. A lightning arrester can help prevent serious damage to your equipment. Most, however, don't work fast enough to protect your station completely. Lightning arrestors are useful for commercial stations and public service (fire and police) stations that must remain on the air regardless of the weather. Unless you are actually handling emergency communications, you shouldn't rely on them alone to protect your equipment, home or life.

[Now turn to Chapter 12 and study questions N4A06, N4A07 and N4B07. Review this section if you have any difficulty with these questions.]

RF SAFETY

We all know basic safety precautions to follow in the ham shack. We know to pull the plug before taking the covers off a transceiver or power supply, for example. Another important concern, one often overlooked, is RF safety. This involves minimizing human exposure to strong radio-

frequency fields. These potentially dangerous fields occur near or around antennas.

Biological effects of RF exposure have been studied for several decades. We know that body tissues subjected to large amounts of RF energy may suffer heat damage. It is possible to receive an RF burn from touching an antenna that is being used for transmitting. You don't have to come into direct contact with an antenna to damage body tissues, however. Just being present in a strong RF field can cause problems.

Taken to extremes, we could compare the effects of RF exposure to the way a microwave oven cooks food. A typical microwave oven uses a 500-W RF source operating at 2450 MHz. The Novice 1270-MHz band is about half this frequency, and so can have similar effects. Of course, the microwave oven is designed to concentrate its RF power for heating food and is not directly comparable to Amateur Radio operations. Some studies have shown that persons who are exposed to strong RF fields over a period of time may be at increased risk to develop certain kinds of cancer.

There is no cause for alarm in most amateur installations. But be aware that exposure to strong RF fields—which we cannot see, smell, hear or touch—can cause health risks.

The amount of RF energy that the body absorbs depends on the radio frequency. The body absorbs RF energy most efficiently in the VHF range (30 to 300 MHz). Absorption is greatest if the antenna orientation is parallel to the body (vertically polarized). Sensitive parts of the body, such as the eyes, are particularly prone to damage from RF energy.

Most amateur operation is with relatively low RF power and is intermittent—the transmitter is not operating continuously. Hams spend more time listening than transmitting. If you use modes such as RTTY and FM, in which the RF carrier is present continuously at full power, you'll need to pay more attention to RF safety.

RF Safety Guidelines

Take the time to study and follow these general guidelines to minimize your exposure to RF fields. Most of these guidelines are just common sense and good amateur practice.

- Confine RF radiation to the antenna, where it belongs. Provide a good earth ground for your equipment. Particularly at VHF and UHF, poor-quality feed line and improperly installed connectors can be a source of unwanted RF radiation. Use only good-quality coaxial cable. Be sure the connectors are of good quality and are properly installed. Good-quality coaxial cable and connectors will also help reduce RF losses in your system.

- Don't operate RF power amplifiers or transmitters with the covers or shielding removed. This practice helps you avoid both electric shock hazards and RF safety hazards. A safety interlock prevents the gear from being turned on accidentally while the shielding is off. This is especially important for VHF and UHF equipment. When reassembling transmitting equipment, replace all the screws that hold the RF compartment shielding in place. Tighten all the screws securely before applying power to the equipment.



Figure 10-4—The boom in home electronic devices continues. Many amateur antennas are close to a growing number of home-entertainment devices. The result: an RFI problem that shows little sign of disappearing.

problems with a stereo system, electronic organ, video cassette recorder, telephone or any other piece of consumer electronic equipment.

If you have a very visible antenna in your yard, your neighbors may blame you for any interference they experience, even when you're not on the air! If you have any problems with interference to your own equipment, it's a good bet that your neighbors do too. On the other hand, if you can show your neighbors that you don't interfere with *your* television, they may be more open to your suggestions for curing problems.

So what should you do if someone complains of interference? First, make sure that your equipment is operating properly. If the complaint is TVI, check for interference to your own TV. If you see it, stop operating and cure the problem before you go back on the air.

Even if you don't interfere with your own TV, don't stop there. Simply telling your neighbors you're not at fault can cause even more problems. Try to work with your neighbors to determine if your rig is actually causing the interference. If so, try to help solve the problem. A more-experienced ham can be a great help. If you don't know any other hams in your area, write to ARRL HQ. We'll try to help you find a knowledgeable local ham.

[Now go back to Chapter 12 and study question N4D11. Review this section if you have any problems.]

RECEIVER OVERLOAD

Receiver overload is a common type of TV and FM-broadcast interference. It happens most often to consumer electronic equipment near an amateur station or other transmitter. When the RF signal (at the fundamental frequency) enters the receiver, it overloads one or more circuits. The receiver front end (first RF amplifier stage after the antenna)



Figure 10-5—A high-pass filter can prevent fundamental energy from an amateur signal from entering a television set. This type of high-pass filter goes in the 300-ohm feed line that connects the television with the antenna.

is most commonly affected. For this reason, we sometimes call this interference **front-end overload** or **RF overload**.

A strong enough RF field may produce spurious signals in the receiver, which cause the interference. Receiver overload interference may occur in your neighbor's house or just your own. Receiver overload can be caused by transmitters operating on any frequency. It is the most-common interference problem caused by VHF and UHF transmitters.

Receiver overload usually has a dramatic effect on the television picture. Whenever you key your transmitter, the picture may be completely wiped out. The screen may go black, or it might just become light with traces of color. The sound (audio) will probably be affected also. In an FM receiver, the audio may be blocked each time you transmit. More often than not, overload affects only TV channels 2 through 13. In cases of severe interference, however, it may also affect the UHF channels.

The objective in curing receiver overload is to prevent the amateur signal from entering the front end of the entertainment receiver. The first step is to have the equipment owner or a qualified service technician install a **high-pass filter**. See Figure 10-5.

Install the filter at the TV or FM receiver input. The best location is where the antenna feed line connects to the TV or

FM tuner. It is *not* a good idea for an Amateur Radio operator to install a filter on a neighbor's entertainment equipment. Only the owner or a qualified technician should install the filter. If you install the filter, you might later be blamed for other problems with the TV set. A high-pass filter is a tuned circuit that passes high frequencies (TV channels start at 54 MHz). The filter blocks low frequencies (the HF amateur bands are in the range of 1.8-30 MHz).

[Now study questions N4D01, N4D02, N4D03 and N4D05 in Chapter 12. Review this section as needed.]

HARMONIC INTERFERENCE

Another problem for hams is harmonic interference to entertainment equipment. As we learned before, harmonics are multiples of a given frequency. Your HF transmitter radiates undesired harmonics along with your signal. Your transmitting frequency is much lower than the TV or FM channels. Some harmonics will fall within the home entertainment bands, however.

The entertainment receiver cannot distinguish between the TV or FM signals (desired signals) and your harmonics (undesirable intruders). If your harmonics are strong enough, they can seriously interfere with the received signal. Harmonic interference shows up as a crosshatch or a herringbone pattern on the TV screen. See Figure 10-6.

Unlike receiver overload, harmonic interference seldom affects all channels. Rather, it may bother the one channel that has a harmonic relationship to the band you're on. Generally, harmonics from amateur transmitters operating below 30 MHz affect the lower TV channels (2 through 6). Ten-meter transmitters usually bother channels 2 and 6, and channels 3 and 6 experience trouble from 15-meter transmitters.

Harmonic interference must be cured at your transmitter. As a licensed amateur, you must take steps to see that harmonics from your transmitter do not interfere with other services. All harmonics generated by your transmitter must be attenuated well below the strength of the fundamental frequency. If harmonics from your transmitting equipment exceed these limits, you are at fault.

In this section we will discuss some of the several possible cures for harmonic interference. Try each step in order and the chances are good that your problem will be solved quickly.

The first step you should take is to install a **low-pass filter** like the one shown in Figure 10-7. The filter goes in the transmission line between your transmitter and antenna or antenna tuner. As the name implies, a low-pass filter is the opposite of a high-pass filter. A low-pass filter allows RF energy in the amateur bands to pass freely. It blocks very high frequency harmonics that can fall in the TV and FM bands. Low-pass filters usually have a specified cutoff frequency, often 40 MHz, above which they severely attenuate the passage of RF energy.

Even if your transmitter is working well within FCC specifications, you may need additional attenuation to reduce harmonics. Remember, your goal is to eliminate inter-

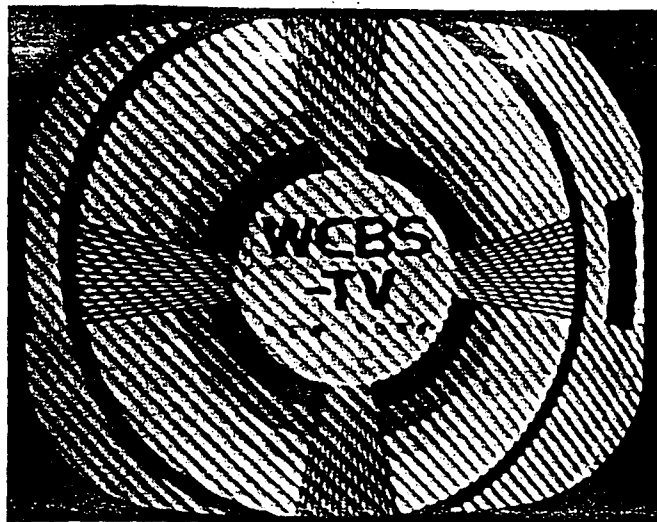


Figure 10-6—Harmonics radiated from an amateur transmitter may cause "crosshatching."

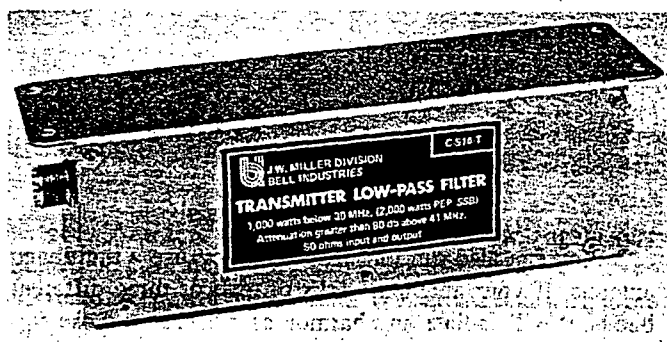


Figure 10-7—A low-pass filter. When connected in the coaxial cable feed line between an amateur transmitter and the antenna, a low-pass filter can reduce the strength of transmitted harmonics.

ference. Good-quality low-pass filters often attenuate signals falling in the entertainment bands by 70 or 80 dB. This is significantly better than the 40 to 50 dB typical of amateur transmitters. A decibel (dB) is a number (the logarithm of a ratio) used to describe how effective the filter is. Larger numbers indicate better filtering. Figure 10-8 shows the output of a transmitter before and after filtering.

Another source of interference is RF energy from your transmitter that enters the ac power lines. The **ac power-line filter** is another kind of low-pass filter. It prevents RF energy from entering the ac line and radiating from power lines inside and near your house.

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF WIRELESSCO, L.P. FOR)	
ISSUANCE OF A CERTIFICATE OF PUBLIC)	
CONVENIENCE AND NECESSITY TO)	
CONSTRUCT A PERSONAL COMMUNICATION)	CASE NO. 96-312
SERVICES FACILITY IN THE LOUISVILLE)	
MAJOR TRADING AREA (BECKLEY STATION)	
PCS FACILITY))	

O R D E R

This matter arising upon the motions of Kenney Curry, Bob and Kitty Kirzinger, Alice K. Curry, Michael A. Diebold, and Nancy O'Neil (hereinafter referred to collectively as "Petitioners") for full intervention, and it appearing to the Commission that Petitioners have a special interest which is not otherwise adequately represented, and that such intervention is likely to present issues and develop facts that will assist the Commission in fully considering the matter without unduly complicating or disrupting the proceedings, Petitioners' motions to intervene should be granted. Ms. O'Neil also requests that a hearing should be set in this matter. However, a number of interested persons have contacted the Commission in regard to this cell site and may yet wish to file motions to intervene. Consequently, the Commission will hold in abeyance Ms. O'Neil's motion for a hearing and will address it at the appropriate time.

IT IS THEREFORE ORDERED that:

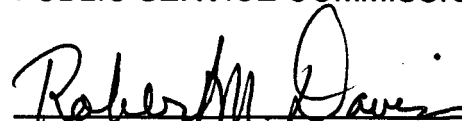
1. The motions of Petitioners to intervene are granted.
2. Each Petitioner shall be entitled to the full rights of a party and shall be served with the Commission's Orders and with filed testimony, exhibits, pleadings, correspondence, and all other documents submitted by parties after the date of this Order.

3. Should any Petitioner file documents with the Commission in the course of these proceedings, said Petitioner shall also serve a copy of said documents on all other parties of record.

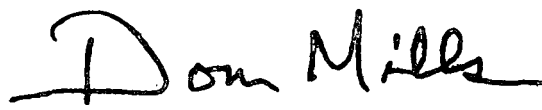
4. Ms. O'Neil's motion for a hearing shall be held in abeyance until further Order of the Commission.

Done at Frankfort, Kentucky, this 24th day of July, 1996.

PUBLIC SERVICE COMMISSION


For the Commission

ATTEST:


Executive Director